Simulation of electromagnetic field (EM) focusing capability on biological tissue through the application of C-type excitation coil screen

Abstract :

In Magnetic Induction Tomography (MIT) or Electromagnetic Therapy system, excitation coil is applied with AC source in generating the electromagnetic (EM) field which then propagate and penetrate the object located in the region of interest (ROI). However, instead to the target object, the fields also propagate around the coil and create interference to the nearby circuit which contributes noise to the system while at the same time wasting the energy. This paper is focusing on the use of C-type excitation coil screen in focusing the EM field to the ROI and measure the penetration depth when different frequency is applied to the generation system.